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(12) # EUROPEAN PATENT APPLICATION

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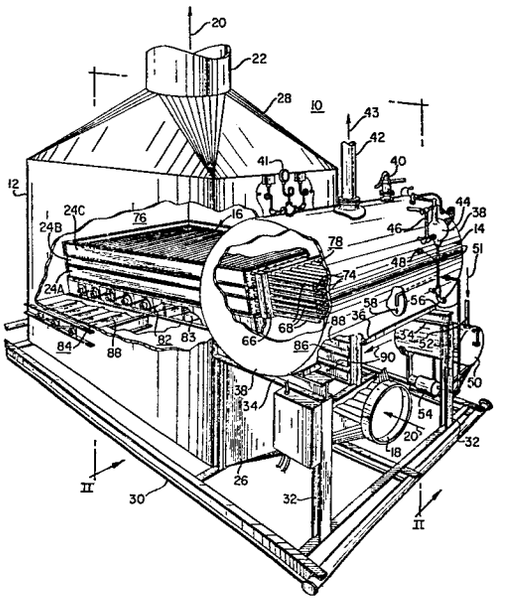
(54) **Waste heat boiler and heat exchange process.**

(57) A waste heat boiler and heat exchange process for recovering waste heat from a stream of heated gas is disclosed. The system includes a convection heat transfer chamber (12), a boiler tank (14), and a plurality of heat pipes (16) thermally interconnecting the convection heat transfer chamber with the boiler tank. Each of the heat pipes includes an evaporator section (24) which is disposed in heat transfer relation with a stream of heated gas flowing through the convection heat transfer chamber, and a condenser section (78) disposed in heat transfer relation with a volume of water disposed within the boiler tank. The evaporator sections and condenser sections are totally enclosed within the convection heat transfer chamber and boiler tank, respectively, and are connected in closed cycle fluid communication with each other. In a regenerative arrangement, exhaust gas discharged from the convection heat transfer chamber is recycled to the input of the convection heat transfer chamber to provide high mass flow at low velocity for optimum efficiency. In another arrangement, superheated steam is provided by a pair of heat pipe boilers whose convection heat transfer chambers are connected in series, with the evaporator of the steam generating unit being located downstream of the superheat unit and the input of the superheat unit being the steam output of the steam generating unit.



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EUROPEAN SEARCH REPORT

0001844
Application number
EP 78 10 1332

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim
	FR - A - 2 330 965 (FLAKTFABRIKEN) * Page 3, lines 2-37; page 4, lines 1-35; figures *	1,3,7
	FR - A - 542 146 (HOOGBRUIN) * As a whole *	1,6,7
	DE - C - 537 771 (SURCHAUFFEURS) * As a whole *	1,7
	US - A - 1 870 009 (HUET) * As a whole *	1,7
	DE - B - 1 928 952 (SIEGENER) * Column 2, lines 31-68; column 3, lines 1-23; figures *	1,7
	FR - A - 1 294 211 (COMECONOMISEUR) * Page 2, left-hand column, lines 10-43; figures *	2
	CH - A - 334 080 (BECKE) * Page 2, lines 35-63; figures *	2
	GB - A - 821 487 (VORKAUF) * Page 2, lines 4-17; figures *	4

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CLASSIFICATION OF THE APPLICATION (Int. Cl.²)

F 28 D 15/00
F 22 B 1/18

TECHNICAL FIELDS SEARCHED (Int.Cl.²)

F 22 B
F 28 D

CATEGORY OF CITED DOCUMENTS

X: particularly relevant
A: technological background
O: non-written disclosure
P: intermediate document
T: theory or principle underlying the invention
E: conflicting application
D: document cited in the application
L: citation for other reasons

&: member of the same patent family, corresponding document

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	14-02-1979	VAN GHEEL

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DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (Int. Cl.²)
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	
A	FR - A - 859 930 (AIR-FRANCE) * Page 2, lines 6-104; page 3, lines 1-13; figures *	1,7	TECHNICAL FIELDS SEARCHED (Int. Cl.²)